

## REMARKS

Claims 1-27 are now pending in the application. Claims 1, 4-9, 12-16, 19, 20, and 24-27 are rejected. Claims 2, 3, 10, 11, 17, 18 and 21-23 are allowable subject matter in which Claims 2, 3, 10, 11, 17, 18 are objected to as being dependent upon a rejected base claim. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the remarks contained herein.

### REJECTIONS UNDER 35 U.S.C. § 103

Claims 1, 4-9, 12-16, 19, 20, and 24-27 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Luo et al. in view of Couch, Jr. et al. The Outstanding Office Action states that the claimed subject matter can be achieved by combining Luo et al., which discloses two solenoids 80 and 48" to effect pre-flow gas charging, with the teaching of Couch, Jr. et al. using bypass solenoids to enable smoother control during transient times (arc transitioning).

Independent Claims 1, 9, 16, 24, and 27 include a system or method that controls the **gas pressure** within the gas conduit. Conversely, the prior art adjusts or compensates the **gas flow rate**, not the gas pressure within the gas conduit. Clearly, gas pressure and gas flow rate are separate and distinct approaches to controlling the gas within a plasma arc torch. More specifically, Luo et al. discloses a "timing of the gas and current shut off processes...illustrated in the timing diagrams of Fig. 1D." (Col. 8, Lines 34-36). Luo et al. does not teach controlling gas pressure to reduce gas flow fluctuations. Similarly, Couch, Jr. et al. does not teach controlling gas pressure to reduce gas flow fluctuations. Because neither Luo et al. nor Couch, Jr. et al. teach or disclose controlling the **gas pressure** within the gas conduit to reduce gas flow

fluctuations, these claims cannot be obvious. Accordingly, Applicant respectfully requests that these claim rejections be withdrawn.

Claims 2-8, 10-15, 17-20, and 25-26 depend from Independent Claims 1, 9, 16, and 24, respectively, and are patentably distinguishable over Luo et al. in view of Couch, Jr. et al. for at least the reasons stated above. Therefore, Applicant respectfully requests that these claim rejections also be withdrawn.

#### **ALLOWABLE SUBJECT MATTER**

The Outstanding Office Action states that Claims 21-23 are allowable and that Claims 2, 3, 10, 11, 17, and 18 are objected to as being dependent upon a rejected base claim and would be allowable if rewritten in independent form.

#### **DRAWINGS**

Applicant has included replacement sheets of drawings to make formal, non-substantive changes to the previous informal drawings submitted with the original application. The formal drawings include computer-generated element numbers and leader lines to replace hand-written element numbers and leader lines. Applicant respectfully requests that the replacement sheets of drawings be entered in the present application.

#### **CONCLUSION**

It is believed that all of the stated grounds of objection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding objections. It is believed that a full and complete response has been made to the outstanding Office

Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (314) 726-7524.

Respectfully submitted,

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### **AMENDMENTS TO THE DRAWINGS**

The attached "Replacement Sheets" of drawings include changes to Figures 1-14.

The attached Replacement Sheets, which include Figures 1-14, replace the original sheets including Figures 1-14.

Attachment: Replacement Sheets